oomington, Indiana 47408





Mr. Michael K. Franklin Attorney General, State of Illinois **Environmental Control Division** State of Illinois Center 100 W. Randolph Street, 12th Floor Chicago, Illinois 60601

Mr. Joseph E. Svoboda General Counsel Division of Legal Counsel Illinois Env. Protection Agency 2200 Churchill Road P.O. Box 19276 Springfield, Illinois 62794-9276

Mr. Dale L. Bennington, P.E. Manager, Energy and Env. Engineering Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641

## Gentlemen:

RE: People of the State of Illinois vs

Keystone Consolidated Industries, Inc.

Case No. 93 CH 000103

(Hazardous Waste Management Units Quarterly Ground Water Technical

Memorandum for August 1994)

In accordance with Section XIX Notices of the Consent Order, enclosed is the abovereferenced report as specified in the Phase 2 Closure Plan. Three copies of this document are being submitted to Mr. Lawrence Eastep and one copy each is being submitted to the remaining addressees. We are also sending one copy (Certified Mail) to Mr. Ken Lovett of the Illinois Environmental Protection Agency, Permit Section.

Sincerely,

EARTH TECH

Robert E. Aten Vice President

cc: K. Lovett

R. Miller (w/o Appendix)

D. Semelroth (w/o Appendix)

A. Running (w/o Appendix)

E. Breland (w/o Appendix)

Certified No. P 891 590 192

Illinois Environmental Protection Agency Mr. Lawrence W. Eastep, P.E. Manager, Permit Section Division of Land Pollution Control, #33 2200 Churchill Road P.O. Box 19276 Springfield, Illinois 62794-9276

Mr. Ralph P. End, Esq. Vice President and General Counsel Keystone Consolidated Industries, Inc. Three Lincoln Centre 5430 LBJ Freeway Suite 1740 Dallas, Texas 75240

1430050001- Peor (\$12.336.0972) Koy Stone Steel & Walsimile 1LD 000714-88/ 812.336.3991

Subpart

US EPA RECORDS CENTER REGION 5



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IEFA - BUL PERMIT SECTION

OFFICE OF RCRA WASTE MANAGEMENT DIVISION EPA, REGION V

Mary A. Gade, Director 217/524-3300 2200 Churchill Road, Springfield, IL 62794-9276

April 6, 1994

Mr. Dale L. Bennington, P.E. Manager, Energy and Environmental Engineering Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641

Re: 1430050001 -- Peoria County Keystone Steel & Wire ILD000714881 Subpart F

A.3

Dear Mr. Bennington:

Pursuant to the July 2, 1993 Consent Order (No. 93 CH 000103), Section VI; Item 28.A, Keystone was to submit a proposal for a Groundwater Management Zone which met the requirements of 35 IAC 620.250.

The Agency has reviewed the July 16, 1993 Proposed Ground Water Management Zone document, received by the Agency July 20, 1993. Based on the data and information provided in the proposal, the Agency hereby establishes a Groundwater Management Zone for Keystone Steel & Wire as described in the July 16, 1993 proposal and further described herein:

- The Groundwater Management Zone is defined as a three dimensional region containing groundwater being managed to mitigate impairment caused by the release of contaminants from a site. Therefore, within 180 days of the February 28, 1994 implementation of the corrective action program, Keystone shall demonstrate that the effective limit of the corrective action process is at least as reaching as:
  - a. groundwater monitoring wells W-1D, W-2, W-3D, W-4D, T-1, T-2A, T-3, T-4A, T-4B, T-6A, T-6B, T-7B, T-9, T-10, T-11B, T-11C, T13B, T-16, T-17, T-19C, T-20 and T-23 (as illustrated in Figure 1); and
  - b. the vertical extent of known contamination as defined by the approved clean-up objectives.
- 2. The Groundwater Management Zone is being approved to mitigate the release of trichloroethylene and 1,1,1-trichloroethane to groundwater at the site. If other constituents are detected in the groundwater in excess of applicable groundwater quality standards, the Groundwater

Management Zone shall be reevaluated for those constituents to determine if the approved corrective action process is effective for mitigating impairment to the groundwater caused by the newly identified contaminants. This evaluation must be completed and submitted to the Agency in writing within 60 days of identifying the additional releases.

- 3. Groundwater monitoring shall be performed as proposed in Section 2.2 of the referenced proposal.
- 4. The Groundwater Management Zone shall be monitored and maintained in compliance with 35 IAC 620.250 and the July 16, 1993 proposal.

If you have any questions, feel free to contact Ken Lovett at 217/524-3285.

Sincerely,

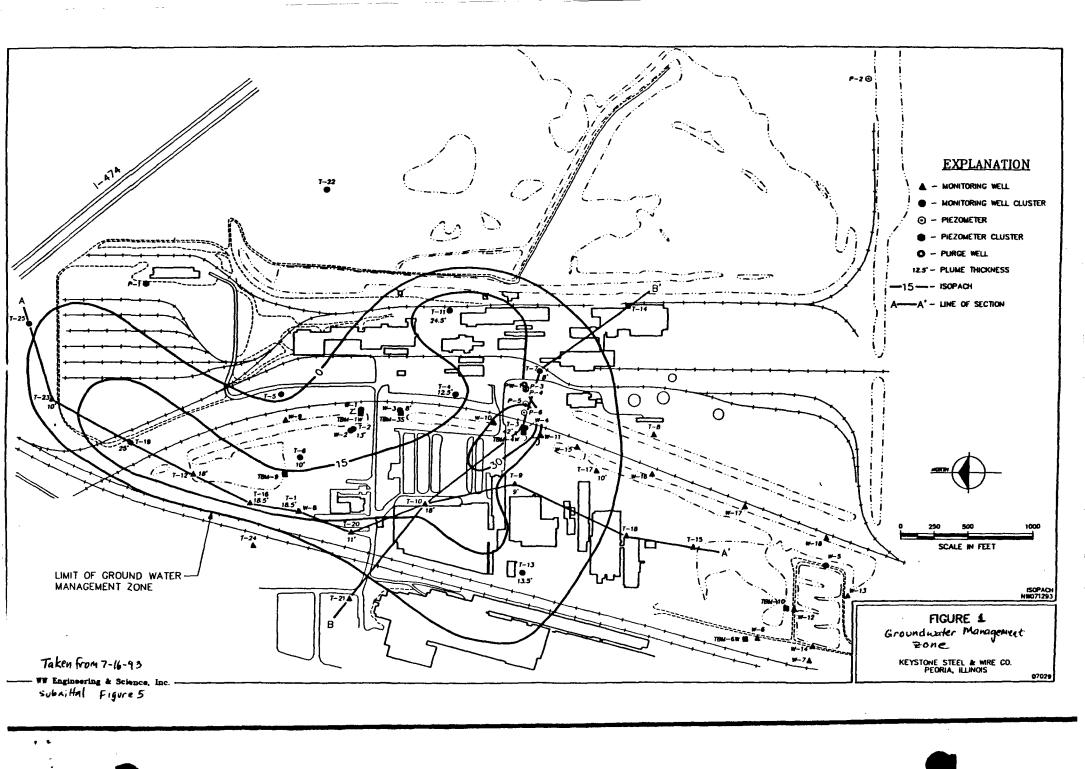
Douglas W. Clay, P.E.

Hazardous Waste Branch Manager Permit Section, Bureau of Land

attachment

DWC:kdl

cc: USEPA Region V





# WW Engineering & Science

A Summit Company

1430050001-Peoria Co Keystone 5tæl & Wire 1LD 000714881 " Subpart F

Mr. Michael K. Franklin Attorney General, State of Illinois **Environmental Control Division** State of Illinois Center 100 W. Randolph Street, 12th Floor Chicago, Illinois 60601

Mr. Joseph E. Svoboda General Counsel Division of Legal Counsel Illinois Environmental Protection Agency 2200 Churchill Road P.O. Box 19276 Springfield, Illinois 62794-9276

Mr. Dale L. Bennington, P.E. Manager, Energy and Environmental Engineering Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641

Gentlemen:

RE: People of the State of Illinois vs

Keystone Consolidated Industries, Inc.

Case No. 93 CH 000103

(Hazardous Waste Management Units Quarterly Ground Water Technical Memorandum

for November 1993)

In accordance with Section XIX Notices of the Consent Order, enclosed is the Quarterly Ground Water Report for the Hazardous Waste Management Units as specified in the Phase 2 Closure Plan. Three copies of this document are being submitted to Mr. Lawrence Eastep and one copy each is being submitted to the remaining addressees. We are also sending one copy (Certified Mail) to Mr. Ken Lovett of the Illinois Environmental Protection Agency, Permit Section.

Certified No. P 279 765 784

January 31, 1994

Illinois Environmental Protection Agency Mr. Lawrence W. Eastep, P.E. Manager, Permit Section Division of Land Pollution Control, #33 2200 Churchill Road P.O. Box 19276 Springfield, Illinois 62794-9276

Mr. Ralph P. End, Esq. Vice President and General Counsel Keystone Consolidated Industries, Inc. Three Lincoln Centre 5430 LBJ Freeway **Suite 1740** Dallas, Texas 75240

RECEIVED WMD RECORD CENTER

MAY 0 4 1994

Sincerely,

Robert E. Aten Vice President

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FEB n 3 1994

IEPA/DLPC

cc: K. Lovett

R. Miller (w/o Appendix)

D. Semelroth (w/o Appendix) A. Running (w/o Appendix)

E. Breland (w/o Appendix)

USSCAF



# WW Engineering & Science

A Summit Company

Certified No. P 279 765 871

October 20, 1993

12050001 - Peoria Co Keystone Steel & Wire ILD 000714881 Subpart

> Mr. Michael K. Franklin Attorney General, State of Illinois **Environmental Control Division** State of Illinois Center 100 W. Randolph Street, 12th Floor Chicago, Illinois 60601

Mr. Joseph E. Svoboda General Counsel Division of Legal Counsel Illinois Environmental Protection Agency 2200 Churchill Road P.O. Box 19276 Springfield, Illinois 62794-9276

Mr. Dale L. Bennington, P.E. Manager, Energy and Environmental Engineering Keystone Steel & Wire Company 7000 S.W. Adams Street Peoria, Illinois 61641

Illinois Environmental Protection Agency Mr. Lawrence W. Eastep, P.E. Manager, Permit Section Division of Land Pollution Control, #33 2200 Churchill Road P.O. Box 19276 Springfield, Illinois 62794-9276

Mr. Ralph P. End, Esq. Vice President and General Counsel Keystone Consolidated Industries, Inc. Three Lincoln Centre 5430 LBJ Freeway Suite 1740 Dallas, Texas 75240

## Gentlemen:

RE:

People of the State of Illinois vs

Keystone Consolidated Industries, Inc.

Case No. 93 CH 000103

(Hazardous Waste Management Units Quarterly Ground Water Technical Memorandum

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Sincerely,

Robert E. Aten Vice President

Robert E. atu.

cc: K. Lovett

R. Miller (w/o Appendix)

D. Semelroth (w/o Appendix)

A. Running (w/o Appendix)

E. Breland (w/o Appendix)

OCT 2 2 1993

PERMIT SECTIO



January 19, 1993

CERTIFIED MAIL: P374 153 625

Mr. Lawrence W. Eastep, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, IL 62794-9276

1430050001 - Peorin Re Feystone Steel à Wire 1CD 000714881 Subpart F

Dear Mr. Eastep:

RE: Keystone Steel & Wire Company, HWMUs Quarterly Ground Water Monitoring Technical Memorandum for November, 1992.

This letter transmits three copies of the above referenced report. One copy is also being sent under separate cover to Mr. Ken Lovett in the IEPA, Groundwater Assistance Unit. Please contact me if you have any questions.

Sincerely,

Robert E. Aten Vice President

Enclosure

cc:

D. Bennington

R. End

A. Running

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JAN 21 1993

IEPA - BOL PERMIT SECTION



January 13, 1993

## CERTIFIED MAIL P 374 153 615

Mr. Lawrence W. Eastep, P.E.
Manager, Permit Section
Illinois Environmental Protection Agency
Division of Land Pollution Control, #33
2200 Churchill Road
P.O. Box 19276
Springfield, Illinois 62794-9276

1430050001-Peoria Co Keystone Steel & Wire 1LD000714881 Subpart F

Just E. Other

Dear Mr. Eastep:

RE: Keystone Steel & Wire Company, TCE Quarterly Ground Water Monitoring Technical Memorandum for November 1992

This letter transmits three copies of the above referenced report. I am also sending one copy under separate cover to Mr. Ken Lovett in the IEPA, Groundwater Assistance Unit. Please contact me if you have any questions or need additional information.

Sincerely,

Robert E. Aten

Senior Geologist

RECEIVED

Enclosure

cc:

JAN 1 9 1993

IEPA-DLPC

R. End

A. Running

D. Bennington



ATE:

May 27, 1987

Land Division File

Stafford Dusenbury, DLPC/FOS - Central Region

ILP 000 714 881

FROM:

SUBJECT:

LPC #1430050001 - Peoria County

Bartonville/Keystone Steel and Wire

RCRA/Subpart F

A sampling inspection was conducted at Keystone Steel and Wire in Bartonville, Illinois on May 27, 1987 by Stafford Dusenbury. Beth Sluys and Scott McCready, two representatives from GeoSciences of Bloomington, Indiana, conducted the sampling. The purpose of the inspection was to observe the method of sampling the monitor wells. Monitor wells 1D, 2D, 5D and two production wells were observed to be sampled during the inspection.

Static water levels in the monitor wells are measured with a Fisher electronic water level indicator. The indicator is rinsed with deionized water after each use. Purge volumes are then calculated and the appropriate amount is removed from each well. Each monitor well has a dedicated teflon bailer and stainless steel wire. After purging the monitor wells, a sample is retrieved and placed in eight bottles. PH is measured in four of the bottles, and SC is measured in the remaining four bottles. The pH meter is an Orion Research 221 meter, and the SC is measured with a meter manufactured by Yellow Springs Instruments.

After pH and SC are measured, groundwater samples are retrieved for TOX, TOC, chlorides, sulfates and metals. Glass bottles are used for the TOX samples. Plastic bottles are used for the chloride, sulfate and metals samples. Nitric acid is used to preserve the TOX, chloride, sulfate and metals samples. Sulfuric acid is used to preserve the other samples. All monitor wells are field filtered using a GeoPump powered by a 12 volt battery.

Field blanks are kept for all of the wells which are sampled. A field logbook is maintained with pH, SC and temperature readings. Sample containers are labelled and iced immediately after sampling.

SVD/is

cc: DLPC/FOS, Central Region
DLPC/Compliance, Steve Davis
DLPC/Peoria

RECEIVED

JUL 1 0 1987

IEPA/DI PC

# APPENDIX A-1

# FACILITY INSPECTION FORM FOR COMPLIANCE WITH INTERIM STATUS STANDARDS COVERING GROUNDWATER MONITORING

# General Information

Heror Facility: NES NO Hotified As: Alnostin Regulated As: As: Asia Regulated	USEPA Number:	8
Street: 7000 SW Adams  City: Bartonville State: IL Zip Code: 6/67  Phone: 309-697-7020 County: Pensia  Facility Contact Official: Dale Bennington Pranch/Organization:  Title: Mar-Invironmental & Energy Eng.  Region: C Date of Inspection: 5/21/81 Time: (From) 9:00 Au(To) 3:00 PM  Type of Inspection: GMM RR F/U (Date of Initial Inspection)  Preparer Information: Section Class Class Class  Agency/Title: Section Class Class Class  Telephone: TEPA/ Env. Prot. Specials Total Class I's & II's O O  YES NO UNKNOWN MAYIED  Type of facility: (check appropriately)  a) surface impoundment Display Control of County Advisory County	Major Facility: YES NO Notified As: 4	enerator Regulated As: generator 151
City: Bartonville State: I/ Zip Code: 6/67  Phone: 309-697-7020 County: Pennia  Facility Contact Official: Dale Bennington Branch/Organization:  Title: Mar - Invironmental & Energy Eng.  Region: C Bate of Inspection: 5/21/81 Time: (From) 9:00 Au(To) 3:00 PM  Type of Inspection: GWM RR F/U (Date of Initial Inspection)  Preparer Information: Section Class Class Class Class Inspection:  Sampling Inspection: Section Class Clas	Facility Name: Keystone Steel and L	Tire Company
Phone: 309-697-7020	street: 7000 SW Adams	0
Facility Contact Official: Dale Benington Pranch/Organization:  Title: Mgr - Environmental & Energy Eng.  Region: C Date of Inspection: 5/21/82 Time: (From) 9:00 Au(To) 3:00 AU  Type of Inspection: GWM RR F/U (Date of Initial Inspection)  Preparer Information: Section Class Class III  Name: S Duanbury  Agency/Title: I I III  TEPA/ Env. Prot. Specified  Telephone: Total Class I's & II's O o  YES NO UNKNOWN WAVIED  Type of facility: (check appropriately)  a) surface impoundment		
Title: Mgr - Environmental & Energy Eng.  Region: C Date of Inspection: 5/21/82 Time: (From) 9:00 Au(To) 3:00 AU  Type of Inspection: GWM RR F/U (Date of Initial Inspection)  Preparer Information: Section III  Name: S Duranbury  Agency/Title: I IEPA/ Env. Prof. Specified  Telephone: Telephone: Total Class I's & II's O O  Type of facility: (check appropriately)  a) surface impoundment	Phone: 309-697-7020	_ County: <u>Peoria</u>
Region: C Date of Inspection: 5/27/82 Time: (From) 9:00/Au(To) 3:00AM  Type of Inspection: GWM RR  F/U (Date of Initial Inspection)  Preparer Information:  Name: S. Dusenbury  Agency/Title:  IEPA/Env. Prof. Specialist  Telephone:  217-786-6892  TOTAL Class I's & II's  O O  YES NO UNKNOWN WAVIED  Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*		
Type of Inspection: GWM RR Sampling Inspection  Preparer Information:  Name: Section  Agency/Title:  IEDA/ Env. Prot. Specialist  Telephone:  3	Title: Mar - Invironmental & Energy En	<u> </u>
Preparer Information:  Section  Section  Class Class II  Name:  Section  Agency/Title:  IEPA/Env. Prot. Specialist  Telephone:  Telephone:  Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*  Class Class II  Nome:  Section  Total Class I's & II's  O o  YES  NO UNKNOWN  MAVIED	Region: $C$ Date of Inspection: $5/27/$	81 Time: (From) 9:00 Au(To) 3:00 AU
Preparer Information:  Section  Section  Class Class II  Name:  Section  Agency/Title:  IEPA/Env. Prot. Specialist  Telephone:  Telephone:  Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*  Class Class II  Nome:  Section  Total Class I's & II's  O o  YES  NO UNKNOWN  MAVIED	Type of Inspection: GWM RR F	/U / / Note of Initial Inspection)
Name: Section I 11  Name: Successful Section I 11  Agency/Title: I I I I I I I I I I I I I I I I I I I	Sampling Inspection	bate of initial inspections
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Agency/Title:  IEPA/ Env. Prot. Specialist  Telephone:  217-786-6892  TOTAL Class I's & II's  YES NO UNKNOWN WAVIED  Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*	Preparer Information:	Section I II
TEPA/ Env. Prof. Specialist  Telephone:  217-786-6892  TOTAL Class I's & II's  O o  YES NO UNKNOWN WAVIED  Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*	Name: 2 /	
TEPA/ Env. Prof. Specialist  Telephone:  217-786-6892  TOTAL Class I's & II's  O o  YES NO UNKNOWN WAVIED  Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*	S. Kuderbury	
Telephone:  217-786-6892  TOTAL Class I's & II'S  YES  NO UNKNOWN WAVIED  Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*		
Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*  TOTAL Class I's & II'S  YES  NO UNKNOWN WAVIED  YES  O O	, , , , , , , , , , , , , , , , , , ,	
Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*  YES NO UNKNOWN WAVIED  YAMPON WAVIED	Telephone: [	
Type of facility: (check appropriately)  a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*	J11-186-68/2	TOTAL Class I's & II's
a) surface impoundment b) landfill c) land treatment facility d) disposal waste pile*		<u>YES NO UNKNOWN WAVIED</u>
b) landfill c) land treatment facility d) disposal waste pile*	Type of facility: (check appropriately)	
c) land treatment facility d) disposal waste pile*		<u> </u>
	c) land treatment facility	, <u></u>
groundwater monitoring program		<del></del>
1 Hop the accordinates months in program		
1. Was the groundwater monitoring program reviewed prior to site visit?  RECEIVED	reviewed prior to site visit?	• RECEIVED
a) Was the groundwater program reviewed at the facility prior  JUL 1 0 1987	reviewed at the facility prior	JUL 1 0 1987
to site inspection?  IFPA/DIPC		IEDY VUI DU
Has a groundwater monitoring program (capable of determining the facility's impact on the quality of groundwater in	(capable of determining the facility's	
the uppermost aquifer underlying the facility) been implemented? 725.190(a)	the appeniosi addition underlying the	$\mathbf{x}$

<sup>\*</sup>Listed separate from landfill for convenience of identification.



April 29, 1986

Mr. Mark A. Haney
Manager, Facilities Compliance Unit
Compliance Monitoring Section
Illinois Environmental Protection Agency
Division of Land Pollution Control
2200 Churchill Road
Springfield, IL 62706

Dear Mr. Haney:

I am writing in response to your compliance inquiry letter of April 16, 1986 (Certified No. P 594561005). The two findings of noncompliance set forth in that letter are predicated upon the assumption that the Keystone Steel & Wire Bartonville facility is subject to regulation under 35 IL Adm. Code, Part 725, Subpart F as a facility engaged in the treatment, storage, or disposal of hazardous wastes, an assumption which Keystone denies. Nonetheless, we are enclosing, for your review, a copy of Dr. Robert Aten's March 21, 1986 report, which contains the requested data from the groundwater monitoring wells at the Bartonville facility.

Sincerely,

DALE L. BENNINGTON

MANAGER, ENERGY AND ENVIRONMENTAL ENGINEERING

DLB:bmk Attachment

CERTIFIED

P 080 888 917

MAIL

RECEIVED
APR 30 1986





DATE:

May 8, 1986

ro.

Mark Haney, Enforcement Decision Group

FROM:

Stephen Davis

5.D.

SUBJECT:

1430050001 -- Peoria County

Bartonville/Keystone Steel and Wire

This memorandum is to request referral of the subject facility to USEPA for additional Subpart F violations to be added on to the pending enforcement case.

A Compliance Inquiry Letter was sent on April 16, 1986 for apparent violations regarding 35 Ill. Adm. Code, Subpart F, Sections 725.194(a)(2)(B) and 725.194(a)(2)(C): Failure to submit the required groundwater evaluations as part of the Annual Report. Keystone failed to respond adequately to this inquiry.

The facility does not possess a current permit, nor does it have interim status to operate the Peoria facility. Keystone does not believe they are subject to RCRA requirements. The facility was issued a Complaint and Compliance Order dated June 28, 1985 by USEPA. Enforcement action has progressed to the Federal Department of Justice.

Based on the above, I am requesting EDG to approve the referral of these additional violations to be used to supplement the pending USEPA enforcement case.

SKD:.ip:2/16

cc: Gary King
Virginia Yang

Stafford Dusenbury

Division File



DATE:

April 4, 1986

Land Division File

FROM:

Stafford Dusenbury, DLPC/FOS - Central Region

SVD by DOT

SUBJECT: LPC #1430050001 - Peoria County - Bartonville/Keystone (Subpart F)

ILD #000714881

An inspection of the Keystone Steel & Wire facility in Bartonville, Illinois was conducted on April 3, 1986. Present during the inspection and representing IEPA were Steve Davis, Jeanette Virgilio, John Tripses, Ken Corkill and Stafford Dusenbury. Dale Bennington and Richard Tinsley were interviewed during the inspection and represented Keystone. The purpose of the inspection was to take samples of waste sludge and wastewater at different points in the wastewater system, to conduct a Subpart F inspection and to conduct a TSD inspection.

Keystone manufactures steel bars and rods, fence wire and posts and nails. Sulfuric acid is used to clean oil, rust and scale from the steel prior to the galvanizing process. This pickling process generates approximately 20,000 gallons of spent pickle liquor (KO62) daily. The KO62 waste is neutralized and discharged through Keystone's wastewater treatment facility.

The spent pickle liquor and other plant wastewaters are discharged by pipe to an open ditch which flows into the north holding pond. The north holding pond is interconnected with the south holding pond. Pump house #1 pumps the wastewater in the south holding pond to a mixing chamber where it is mixed with recycled wastewater (Illinois River water is no longer used to dilute the K062 waste). The mixture is discharged to an earthen aeration basin (Equalization Reservoir). Pump house #3 pumps wastewater from the aeration basin to a steel neutralization tank where lime is added. Discharge from the neutralization tank is to north and south concrete sedimentation basins. Effluent from the sedimentation basins is discharged to the Illinois River (under NPDES permit) and is recycled for diluting the incoming wastewater. Sludge from these basins is pumped through a pipe to north and south earthen sludge lagoons. Effluent from the sludge lagoons is discharged to the Illinois River under NPDES permit. The sludge is stored in the sludge lagoons.

Spent pickle liquor is discharged occasionally by pipeline to the mid-mill ditch located north of the north holding pond. The mid-mill ditch is connected by an underwater culvert to a ditch located to the north. This northmost ditch is approximately one-half of a mile in length. The mid-mill ditch is approximately one-eighth of a mile in length.

> RECEIVED ENFORCEMENT PROGRAMS

MAY 16 1986

Environmental Protection Agency

, LPc

The mixture of spent pickle liquor and wastewaters discharged to the mid-mill ditch and the north and south holding ponds is defined as a hazardous waste. The earthen impoundments (numbered 1-7 below) are receiving and storing hazardous KO62 waste without interim status or a RCRA permit. The following facility components are subject to Subpart F Groundwater Monitoring requirements.

1. North Holding Pond

2. South Holding Pond

3. Aeration Basin (Equalization Reservoir)

4. Mid-Mill Ditch

- 5. North-Most Ditch
- 6. Sludge Pile West of North Holding Pond
- Ditch West of North Holding Pond

Keystone previously operated an on-site hazardous arc dust landfill which closed in 1978, prior to RCRA. Keystone conducted a groundwater monitoring and surface water monitoring program for the arc dust landfill until 1981 when the state required post-closure monitoring period expired. The arc dust landfill remained closed and is not subject to Subpart F requirements. Arc dust currently generated by Keystone is disposed of off-site at Peoria Disposal Company landfill.

Five different points were sampled during the inspection. The first point sampled (Point A) was where wastewater discharges into the mid-mill ditch. Both waste sludge and wastewater samples were taken at Point A. The second point sampled (Point B) was twelve inches below the surface of the northernmost pile of sludge which was dredged from the north pond. The third point sampled (Point C) was of sludge from the north pond, adjacent to the berm between the north and south ponds. Sample D was taken from near the discharge point on the south edge of the north sludge lagoon. Sample E was taken from the wastewater discharging from the rod cleaning and galvanizing lines, immediately downstream from the discharge pipe. All sampling devices were decontaminated with deionized water between samples, except for the water and sludge samples (taken in that order) which were taken from the same location. An IEPA chain of custody form was used and the samples were ice packed and delivered to the IEPA lab in Springfield. Samples were split with Dale Bennington of Keystone. Refer to attached sketch of sampling locations. The following information is provided as a supplement to the Subpart F checklist. Items are referenced to questions in Appendix A-1 and B checklists. Appendices A-2, A-3, C and D do not apply to this facility.

## STATE OF ILLINOIS NUMBORIMENTAL PROTECTION AGENCY

Subject Keystone	ADM 39 054-002
Data location of sampling points  Reviewed by	Date 4/4/86
drawing not to scale and does not depict the actual order of components in the wastemator system.	143005000/ Peria Count Peria / Keystone ILD000714881
Sludge lagoons	mid-mill Ditch
mid-mill wastewater discharge	E B Pond.
cleaning and	north pond
dreda	pump house #1 South pond

A-E depict points sampled water samples and sludge samples were taken at points A and D water samples only were taken at point E: sludge samples only were taken at points. Band C.

# Summary of Apparent Violations

The current system of six monitor wells at the Keystone facility is in non-compliance with the 35 Illinois Administrative Code, Part 725, Subpart F for the following reasons.

Pursuant to Section 725.190(a), Keystone must implement a groundwater monitoring program capable of determining the facility's impact on groundwater quality of the uppermost aquifer underlying the facility. Keystone is in apparent violation of 725.190(a) for the following reason: the current system consisting of six wells is incapable of providing adequate information regarding the facility's impact on the groundwater quality of the uppermost aquifer underlying the facility.

Pursuant to Section 725.191(a), a groundwater monitoring system must be capable of yielding groundwater samples for analysis and must consist of

- (1) Monitoring wells (at least one) installed hydraulically upgradient from the limit of the waste management area. Their number, location and depth must be sufficient to yield groundwater samples that are
  - (A) representative of background groundwater quality in the uppermost aquifer underlying the facility and
  - (B) not affected by the facility;
- (2) Monitoring wells (at least three) installed hydraulically upgradient at the limit of the waste management area. Their number, location and depth must ensure immediate detection of contaminant migration from the waste management area to the uppermost aquifer underlying the facility. Keystone is in apparent violation of 725.191(a)(1) for the following reasons: no monitoring wells installed have been established as upgradient which are capable of yielding groundwater samples representative of background groundwater quality in the uppermost aquifer underlying the facility and not affected by the facility. Per the USEPA's Groundwater Monitoring Guidance Manual, Keystone must submit the following information before a determination can be made as to the depth, location and number of upgradient and downgradient wells required:
  - 1. Piezometer installation for water level measurements at different depths.

- 2. Documentation of methods used to correlate and analyze data from the hydrogeologic assessment.
- 3. At least one geologic cross section of each waste management unit at the facility. Specifically, geologic cross sections of the mid-mill ditch, northmost ditch, sludge piles west of north holding pond, south holding pond and aeration basin.
- 4. Geologic and soil maps of the Keystone area.
- 5. Structure contour maps of the uppermost aquifer underlying the facility and of the confining layer(s) underlying the facility.
- 6. Narrative description of groundwater flows.
- 7. Water table/potentiometric map showing groundwater contours, flow directions, static water levels and monitor well locations.
- 8. Hydrologic cross sections of the water table in the Keystone area.
- 9. A regional hydrogeologic map of the facility delineating major areas of discharge/recharge, regional groundwater flow direction and potentiometric contours.
- 10. Documentation of the rationale for selecting the spacing of borings and of monitor well locations.
- Documentation confirming borings were drilled to the depth of the first confining unit below the uppermost saturated zone or ten feet into bedrock.
- 12. A field log including detailed information of borings.
- 13. Information confirming the presence of a confining layer with a permeability capable of impeding contaminant migration off of Keystone property, including hydraulic conductivity calcuations of the confining layer.
- 14. Documentation of the extent of any potential confining layers underlying Keystone.
- 15. A topographic map constructed by a licensed surveyor.

- 16. Information regarding possible seasonal fluctuations in groundwater levels and flow directions which are influenced by seasonal fluctuations in the Illinois River and pumping of the two production wells on Keystone property.
- 17. Information regarding the long term effects on groundwater movement which will result from modification of the wastewater treatment system.
- 18. Documentation confirming the accuracy of hydraulic conductivity measurements based on single well tests.
- 19. A more thorough definition of the extent of the uppermost aquifer underlying the Keystone facility.

Pursuant to Section 725.192(a), Keystone must develop and follow a groundwater sampling and analysis plan. The plan must include procedures and techniques from sampling and sample analysis as specified in section 725.192(a). Keystone must determine the concentration or value of the parameters specified in 725.192(b)(1)-(3). Pursuant to Section 725.192(c), Keystone must establish initial background concentrations or values of all parameters specified in 725.192(b). This must be done quarterly. For each of the indicator parameters specified in 725.192(b)(3), at least four replicate measurements must be obtained for each sample and the initial background arithmetic mean and variance must be determined by pooling the replicate measurements for the respective parameter concentrations or values in samples obtained from upgradient wells during the first year. Keystone is in apparent violation of Section 725.192(a),(b) and (c) for the following reasons: a sampling and analysis plan has not been developed which includes procedures and techniques for sampling and sample analysis as specified in Section 725.192(a); concentrations or values of parameters specified in 725.192(b)(1)-(3) (other than pH and specific conductance) were not determined; initial background concentrations of parameters specified in Section 725.192(b) were not established; replicate measurements of the indicator parameters specified in Section 725.192(b)(3) were not obtained, nor were the arithmetic mean and variance determined from upgradient wells.

Per the USEPA's Groundwater Monitoring Guidance manual the following information must be submitted to come into compliance with Section 725.192.

(1) Establish a permanent bench mark with a licensed surveyor.

- (2) Address the different types of wastewaters discharged to the wastewater treatment system which would necessitate monitoring and sampling for immiscible liquids.
- (3) Procedures for evacuating wells prior to sampling.
- (4) Information regarding the sequence of parameters sampled for during sample withdrawal.
- (5) Information regarding sampling techniques used when sampling with a bailer.
- (6) More detailed information concerning sampling equipment decontamination procedures.
- (7) Justification for why only pH was field measured and why specific conductance was measured in lab.
- (8) A determination of whether or not sample removal is made after well evacuation.
- (9) Whether or not monitoring equipment is calibrated prior to use.
- (10) The type of containers used for specific parameters sampled for.
- (11) More detailed information on sample preservation procedures.
- (12) Information regarding whether or not equipment blanks are prepared each day of sampling.
- (13) Information regarding the methods used for sample analyses, such as QA/QC measures.
- (14) More detailed information regarding chain of custody procedures, including a written record and plan showing same control from time of collection to time of analysis.

Pursuant to Section 725.193(a)&(b), Keystone must prepare an outline of a groundwater quality assessment program. This outline must include items 1-3 of 725.193(a). For each indicator parameter specified in 725.192(b)(3), Keystone must calculate the arithmetic mean and variance as specified in 725.193(b). Keystone is in apparent violation of Section 725.193(a)&(b) for the following reasons. No outline of an assessment program was submitted, and arithmetic means and variances were not calculated for the indicator parameters as specified in 725.193(b).

SD/jq

#### Attachments

cc: DLPC/FOS, Central Region
DLPC/Compliance, S. Davis
DLPC/Enforcement, V. Yang
USEPA, Region V



DATE:

April 4, 1986

TO:

Division File

FROM:

Jeanette Virgilio

SUBJECT:

1430050001 -- Peoria County

Bartonville/Keystone Steel & Wire

Site Visit/Inspection (RCRA and Subpart F)

RECEIVED

LINFORGENIENT PROGRAMS

103 10 1986

**Environmental Protection Againty** 

This memo is to document a site visit conducted at the above referenced facility on April 4, 1986 at 9:30 A.M. by the following Agency personnel: Jeanette Virgilio - DLPC/Permits; Steve Davis - DLPC/Compliance Monitoring; and Ken Corkill - DLPC/Remedial Project Management. The visit was coordinated with the Agency's field inspection representatives John Tripses - DLPC/FOS/Peoria Region, who conducted a full RCRA inspection; and Stafford Dusenbury - DLPC/Central Region, who conducted a Subpart F/CME inspection. Dale Bennington, Manager, Energy and Environmental Engineering, and Richard Tinsley, Manager, Safety and Health, Keystone Steel and Wire, were also in attendance during the site visit/inspections. The purpose of the site visit was to assist the Agency in preparing the Facility Management Plan (FMP) for this facility, and to bring the site up to date on its inspections.

The site visit/inspection commenced in Keystone's conference room with S. Dusenbury initiating the Subpart F inspection. Dale Bennington was interviewed. During the interview, Mr. Bennington presented a copy of Keystone's construction permit application to modify their existing NPDES Permit #IL0002526, addressed to Mr. Mark Schollenberger, IEPA/DWPC/Industrial Unit, Permit Section (see attached). Per Mr. Bennington, the treatment plant was constructed around 1968. Prior to the establishment of the treatment system, wastewaters generated from rod cleaning and galvanizing processes were discharged to the existing ditches which lead to the Illinois River. Keystone's position in regards to the wastewaters discharged into the ditches is that the wastewaters are non-hazardous and the ditches are part of the totally enclosed treatment plant on-site. The discharge wastewaters consist of a combination of pickling liquor (approximately 15,000 gallon/day sulfuric acid pickle liquor from rod cleaning, and approximately 100 gallon/day hydrochloric acid pickle liquor from galvanizing), plant storm water run-off, cooling waters, and other process wastewaters. Keystone feels the wastewater mixture is non-hazardous. E.P. Toxicity tests have been run on the treatment plant sludge lagoons and results were included with their delisting petition granted by USEPA. However, in an attempt to resolve the problems with the EPA, Keystone is proposing to modify their site operations via modifications to their IEPA DWPC

sent 6/20/86 vg

NPDES permit by installing a 0.5 million gallon pickle liquor collection tank that will be directly connected to the treatment plant, by-passing all ditches and eliminating the aeration basin. Mr. Bennington indicated that there is one potential problem with the proposed modifications. In the event that a malfunction occurs at the treatment plant, all operations would have to be shut down due to the elimination of the purge/reservoir capacity of the aeration basin. Mr. Bennington also indicated that a minor modification has been made at the facility's treatment system. Keystone has substituted high pH treated effluent discharge (for mixing with the acidic wastewaters in the aeration basin prior to neutralization) instead of utilizing river water, as done in the past. This would provide preliminary neutralization capability prior to actual treatment, and lower the amount of lime slurry needed for further neutralization.

Steve Davis inquired about the monitoring wells that have been installed particulary, their location and construction/installation details. Mr. Bennington identified their locations on an aerial photograph that was brought to the inspection by S. Dusenbury (see attached plot plan). Mr. Bennington had no knowledge of the wells' construction details, other than that Keystone lawyers had contracted Geoscience Research Associates, Inc., out of Bloomington, IN, (contact person: Bob Aten, 812/336-0972) to conduct the groundwater "survey" and that Central Illinois Drilling from Bloomington, IL had installed the wells around November-December. In February, one round of samples were taken from the wells, analyzed for lead, cadmium, chrome and pH. Bennington, the results had been forwarded to USEPA, Region V, and that the groundwater "survey" plans and implementation had been coordinated between Keystone's lawyers, consulting geologists, and USEPA (contacts: Jim Rittenhouse and Rich Metnick). S. Dusenbury continued his Subpart F inspection. No official groundwater monitoring or sampling and analysis plan, nor plans/specifications concerning well installation, boring logs, or analytical documentation, were on file at Keystone for review. According to Mr. Bennington, all this information is on file with their geologists and with USEPA. Mr. Bennington also indicated that the wells had been installed as part of a one time analytical demonstration to the Agency that the groundwater in the area has not been impacted by Keystone's pickle liquor discharge activities.

John Tripses then initiated the RCRA inspection/interview. J. Virgilio accompanied J. Tripses for a portion of the manifest file review. Currently, Keystone is disposing of their arc furnace dust (KO61) at Peoria Disposal Company under Special Waste Stream Permit No. 790213. The spent solvent they generate, 1,1,1-trichloroethane (F002), is shipped to Safety-Kleen in Elgin, Illinois under Generic Permit No. 00003, out-of-state Hydrite to in Wisconsin via Valley (transporter). Upon J. Tripses' completion of the paperwork portion of the RCRA inspection, he inquired about Keystone's willingness to allow the Agency to take samples during the inspection. Mr. Bennington indicated that Keystone would not prevent the Agency from sampling.

Mr. Bennington and Mr. Tinsley then accompanied Agency personnel on a tour of the facility's RCRA units and treatment plant. The tour initiated at the Midmill Ditch and proceeded south to the North and South Holding Ponds. A total of five samples were taken from the discharge outfall ditches, and one core sample was taken from the dredged material (sludge from the holding ponds) being stored in piles on either side of the west ditch (see attached plot for exact locations). Below is a detailed description of the samples taken and sampling devices used.

- \*1. Midmill Ditch: X001 effluent sample taken at outfall discharge point from Midmill Plant using a quart jar attached to the end of a 6' wooden pole (jar sampler); X002 sludge sample taken at same location as X001 utilizing the same sampling device.
  - \*(Note: Due to the steep slope of the Midmill Ditch's bank, Mr. Bennington insisted upon taking these first two initial samples to prevent any possible injury to Agency personnel.)
  - 2. North Holding Pond: X004 sludge sample near bank on SE end of pond across from Pump House #1 using jar sampler; X005 sediment sample taken at one foot depth utilizing galvanized copper sampling pipe designed by Rich Lange, IEPA/DLPC/Remedial Project Management (due to the density of the sediment/sludge and the difficulty experienced in extracting the sample from the sampler, only a small core was obtained approximately 1" core).
  - 3. North Dredge Pile: X003 a composite sample of cores taken at approximately 6" and 12" depths on the southern end of the pile using a soil core sampler.
  - 4. West Ditch: X009 effluent sample of Wire Mill discharge outfall using jar sampler (due to limited access to outfall point from behind the plant, sample was taken at end of site visit).

NOTE: All sampling devices were decontaminated with deionized water between samples, except for samples X001 and X002, which were taken from the same location.

Inspection of the ditches revealed heavy dark rust discoloration of banks and sediment, and evidence of dead vegetation. Organic sheens were noted on the surface of the wastewaters at several locations throughout the series of ditches (Midmill Ditch, North and South Holding Ponds).

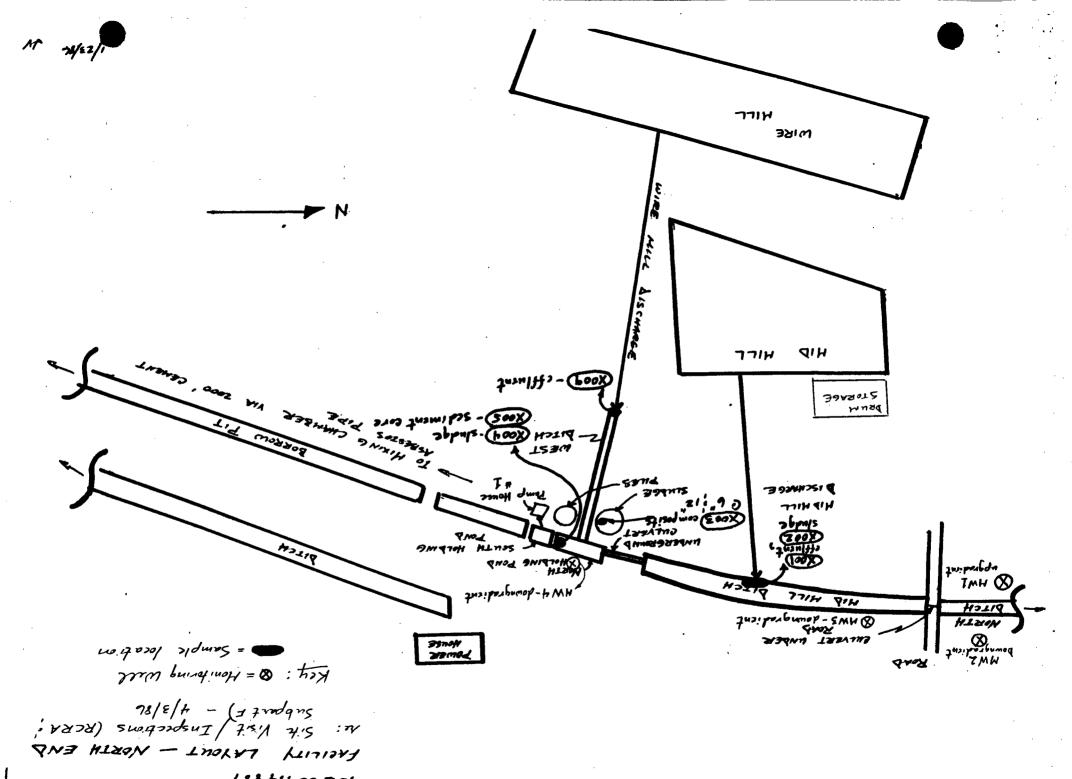
The tour proceeded to the treatment plant located south of the ditch/ holding pond area, upon completion of J. Tripses' inspection of the drum storage area located behind the Midmill Plant (on east side). Drums are stored outdoors on pallets above a gravel/dirt base at a maximum of two high. Approximately 50 drums were being stored at the time of the inspection. During the inspection of the treatment plant area, the north sludge lagoon was sampled as follows: X006 - effluent sample due west of the effluent outfall (003 discharge) using jar sampler; X007 - sludge sample at top of sludge layer in immediate vicinity of effluent outfall (003 discharge) using dredge sampler; X008 sludge sample taken at lower depth (approximately 8" down into sludge) in immediate vicinity of sample X007 using dredge sampler. The sludge lagoons were noted at approximately 90% full. According to Mr. Bennington, the sludge lagoons are 15' in depth.

Following the sampling of the north sludge lagoon, a brief tour of the treatment system was conducted. The treatment system consists of aeration, neutralization with lime and sedimentation prior to discharge to the Illinois River. During the time of the inspection, the north sedimentation basin had been drained for cleaning and maintenance purposes, and was being refilled. Observation of the effluent outfall from the sedimentation basins (001 discharge) revealed a clear discharge stream. The final action taken during the site visit was an effluent sample from the Wire Mill discharge point source (X009). This concluded the site visit at approximately 3:00 P.M., and Jeanette Virgilio, Staff Dusenbury, Steve Davis and Ken Corkill left the facility to return to Springfield. J. Tripses remained at the site to complete the RCRA inspection of the arc furnace dust storage areas.

JV:tk:5/4/15(4/9/86)

#### Attachments

cc: Steve Davis
Stafford Dusenbury, Central Region
John Tripses, Peoria Region
Jim Rittenhouse, USEPA, Region V
Virginia Yang, Enforcement
Ken Corkill



Bartonville / Key stone Steel , were

-

Kiter to: 143 005 000 - 1 com or

1 28/52/1



March 25, 1986

Mr. Mark Schollenberger Industrial Unit, Permit Section Division of Water Pollution Control Illinois Environmental Protection Agency 2200 Churchill Road Springfield, IL 62706

RE: CONSTRUCTION PERMIT APPLICATION - NPDES PERMIT #IL0002526

Dear Mr. Schollenberger:

Enclosed are the following Construction Permit Application documents (one original and one copy):

- . WPC-PS-1 (WPC-150, 2 pages)
- . WPC-155 (Schedule F, 2 pages)
- Specifications (5 pages)
- . Hydraulic Profile Drawing

As I stated in our March 7 meeting, Keystone anticipates reaching an agreement before April 15 with the USEPA - Region V, Division of Land Pollution regarding eliminating acidic waste waters from our various ditches and reservoirs. We propose to collect all of our acidic waters in a large tank and pump them directly to the Waste Water Treatment Plant in enclosed piping systems.

You mentioned in our meeting that the Hydraulic Profile is the major component necessary for your approval of this application.

The scheduled completion date is October 28, 1986. It is necessary to obtain both IEPA and USEPA approval before we start. To meet the schedule, we need to start on or before April 15. For this reason, we solicit your approval as soon as possible.

If you have any questions, please feel free to contact our engineering consultants; Clark Engineers, Mr. Dennis Hermann/Mr. Roger Keefauver at (309) 444-8464.

Sincerely,

DALE L. BENNINGTON, P.E.
MANAGER, ENERGY AND
ENVIRONMENTAL ENGINEERING

DLB:bmk Attachment(s)

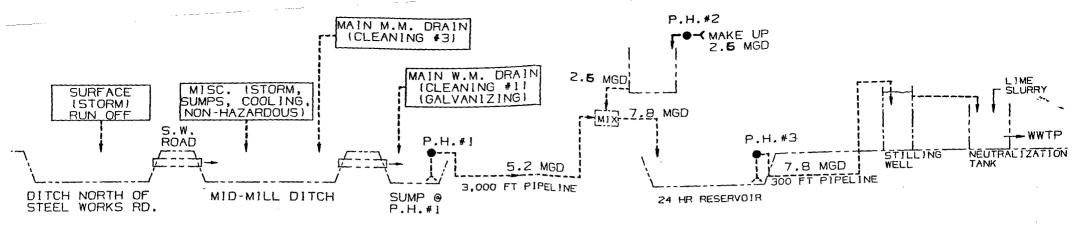
cc: J. Ring (w/o att.)

J. Monroe (")

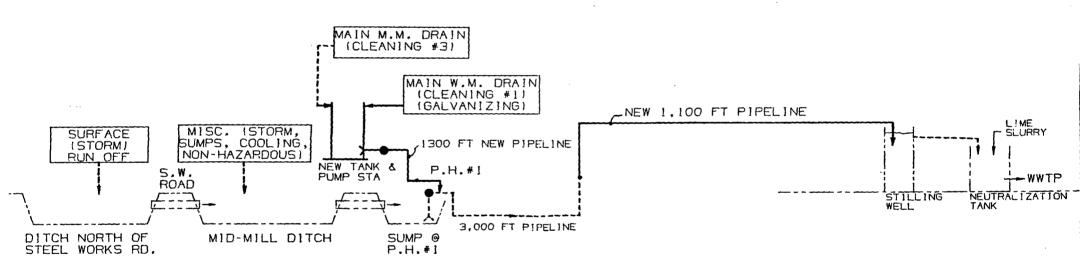
L. Phillips (")

D. Hermann(")

L. Ray - IEPA (w/att.)



# EXISTING WATER SYSTEM @ WM/MM



# PROPOSED WATER SYSTEM @ WM/MM

---- EXISTING
---- NEW

Dale Benning for 3/81/86



DATE:

May 21, 1985

RECLIVED

Land Division File

JUN 11 1985

FROM:

Rick Hersemann, DLPC/FOS - Central Region

TOALIN PG

SUBJECT:

LPC #14300501 - Peoria County

Bartonville/Keystone (Subpart F)

An inspection of the Keystone Steel & Wire facility in Bartonville, Illinois was conducted on May 21, 1985. Those present during the inspection included Mr. Dale Bennington, Environmental Engineer; and Mr. Rick Hersemann, IEPA, DLPC/FOS.

The purpose of the inspection was to check Keystone's compliance with Subpart F Interim Status Standards for groundwater monitoring. Keystone manufactures steel bars and rods, fence wire and posts, and nails. Sulfuric acid is used to clean oil, rust, and scale from the steel prior to the galvanizing process. This pickling process generates approximately 20,000 gallons of spent pickle liquor (KO62) per day which is neutralized and discharged through Keystone's wastewater treatment facility.

The spent pickle liquor and other plant wastewaters is discharged by pipe to an open ditch which flows into the north holding pond. The north holding pond is interconnected with the south holding pond. Pump Station #1 pumps the wastewater in the south holding pond to a mixing chamber where it mixes with Illinois River water pumped from Pump Station #2. This mixture is discharged into an earthen aeration basin (Equalization Reservoir). Pump Station #3 pumps wastewater from the aeration basin to a fiberglass stilling well, and a steel neutralization tank where lime is added. Discharge from the neutralization tank is to north and south concrete sedimentation basins. Effluent from these basins is discharged to the Illinois River under NPDES permit. Sludge from these basins is pumped to north and south earthen sludge lagoons. Effluent from these lagoons is discharged to the Illinois River under NPDES permit. Keystone was granted a temporary exclusion from the hazardous waste list for this sludge, as published in 40 CFR on August 6, 1981. In addition, lime stabilized waste pickle liquor sludge generated by the iron and steel industry was exempted by USEPA from the presumption of hazardousness, effective December 5, 1984.

Spent pickle liquor is discharged occasionally by pipeline to the mid-mill ditch located north of the north holding pond. The mid-mill ditch is connected to the north holding pond by an underwater culvert. The mid-mill ditch is also connected by an underwater culvert to a ditch located to the north. This north-most ditch is approximately a half mile in length. The midmill ditch is approximately a quarter mile in length.

The mixture of spent pickle liquor and wastewaters discharged to the mid-mill ditch and the north and south holding ponds is defined as a hazardous waste. Keystone does not have interim status or a RCRA permit for the earthen impoundments that are receiving and storing hazardous waste upstream of the neutralization plant. The following facility components are subject to Subpart F Groundwater Monitoring requirements.

- 1. North Holding Pond
- 2. South Holding Pond
- 3. Aeration Basin (Equalization Reservoir)
- 4. Mid-Mill Ditch
- 5. North-Most Ditch
- 6. Sludge Piles West of North Holding Pond
- 7. Ditch West of North Holding Pond

Keystone previously operated an on-site hazardous arc dust landfill which closed in 1978, prior to RCRA regulations. Keystone conducted a groundwater monitoring and surface water monitoring program for the arc dust landfill until 1981 when the State required post-closure monitoring period expired. The arc dust landfill remains closed and is not subject to Subpart F requirements. Arc dust currently generated by Keystone is disposed of off-site at the Peoria Disposal Landfill.

The following information provides clarification and more detail to the Subpart F inspection checklists. Items are referenced to specific questions of Appendix A-1 and Appendix B checklists. Checklist items which are self-explanatory are not referenced. Checklist items needing clarification or more detail are referenced to the specific question's number.

#### APPENDIX A-1

- 2. Keystone has not implemented a groundwater monitoring program as required under 725.190(a). The uppermost aquifer underlying the facility has not been defined by Keystone. Since no groundwater monitoring system has been installed, the facility's impact on groundwater quality in the uppermost aquifer cannot be determined.
- 3. Keystone has not installed any upgradient monitor wells in the uppermost aquifer underlying the facility. Since Keystone's facility is so large (approximately one mile in length), more than one upgradient well will be needed.

- 4. Keystone has not installed any downgradient monitor wells in the uppermost aquifer underlying the facility.
- 5. Keystone has no groundwater monitoring system at their facility. Components requiring groundwater monitoring are a) North-most Ditch, b) Mid-Mill Ditch, c) North Holding Pond, d) South Holding Pond, e) Aeration Basin, f) Sludge Piles west of North Holding Pond, and g) Ditch west of North Holding Pond.
- 8. Keystone has not developed a groundwater sampling and analysis plan as required under 725.192(a).
- 9. Keystone has not sampled quarterly for the parameters required in 725.192 (b)(1), 725.192 (b)(2), and 725.192(b)(3) for the first year. Replicate samples for indicator parameters were not collected from the upgradient wells. The initial background arithmetic mean and variance for respective parameters was not calculated for the upgradient wells.
- 10. Keystone has not prepared an outline of a groundwater quality assessment program as required under 725.193(a). Records required under 725.194(a) (1) have not been kept.

#### APPENDIX B

- 2.1 Keystone has plan sheets and aerial photos of the facility with scales of 1:200 on file. Keystone's facility is located in the floodplain of the Illinois River. A bluff is located west of the facility with the backwaters of the Illinois River located to the east. Keystone has many onsite ponds and ditches. Keystone also has two on-site wells, approximately 160 feet deep, which are used for drinking water and process water.
- 2.2 Keystone does not have a regional hydrogeologic map of the area around their facility.
- 2.4 Keystone has not prepared a site water table (potentiometric) contour map.
- 3.0 No soil borings or test pits were made at Keystone's facility for RCRA compliance.
- 4.0 No monitor wells were installed at Keystone's facility for RCRA compliance. Keystone has two on-site water supply wells approximately 160 feet deep.

- 5.0 Keystone has not defined the uppermost aquifer underlying their facility. No geologic cross-sections or site water table (potentiometric) contour maps were prepared. Aquifer hydraulic properties were not determined.
- 6.0 Keystone has not defined the uppermost aquifer underlying their facility. No monitor wells have been installed.
- 7.1 Keystone has not implemented a sampling program and schedule as required under 725.192.
- 8.0 Keystone has not prepared a groundwater sampling and analysis plan as required under 725.192. This plan must include procedures and techniques for sample collection, sample preservation and shipment, analytical procedures, and chain of custody control.
- 9.0 Sample analysis, statistical evaluations, and record keeping have not been performed by Keystone as required under 725.192 and 725.194.
- 10.0 Site verification was made by physically inspecting the north-most ditch, mid-mill ditch, north holding pond, south holding pond, sludge piles, aeration basin, ditch west of the north holding pond, fiberglass stilling well, steel neutralization tank, concrete sedimentation basins, sludge storage lagoons, and the closed arc dust landfill.

The north-most ditch measured approximately 100 feet east-west and approximately a half mile north-south. According to Mr. Bennington this ditch was approximately three feet deep. Treelines are located adjacent to the north-most ditch on the west and east banks. Just east of the east treeline is a steep railroad embankment. An underwater pipe at the south end of the north-most ditch connects the ditch to the north end of the mid-mill ditch.

The mid-mill ditch measured approximately 100 feet east-west and approximately a quarter mile north-south. According to Mr. Bennington the mid-mill ditch is also three feet deep. The water at the south half of the mid-mill ditch was orange in color. Treelines are located on the east and west banks of the mid-mill ditch. A steep railroad embankment is also located east of the east treeline. An underwater pipe at the south end of the mid-mill ditch connects the ditch to the north holding pond. Water was flowing into the north holding pond from this pipe.

Spent pickle liquor and wastewater was entering the north holding pond from a ditch located to the west. The north holding pond is interconnected with the south holding pond. A dam is located at the south edge of the south holding pond. A steep railroad embankment is located just east of the north and south holding ponds.

Two sludge piles are located just west of the north holding pond. One sludge pile is located north of the ditch which carries spent pickle liquor and wastewater to the north holding pond. The other sludge pile is located south of this ditch. Sludge was dredged from the north and south holding ponds in 1982 and placed in the present location.

The aeration basin is located approximately a half mile south of the south holding pond. The aeration basin measured approximately 400 feet north-south and 800 feet east-west. The aeration basin is approximately 12 feet deep according to Mr. Bennington. Mr. Bennington said that the aeration basin was unlined and contained approximately four to six feet of sludge. The water and sludge was orange in color. The aeration basin had approximately three to four feet of freeboard.

Mr. Bennington conducted a tour of the neutralization process of the waste-water treatment plant (fiberglass stilling well, steel neutralization tank, and concrete sedimentation basins). Sludge from the concrete sedimentation basins was being pumped to the south sludge lagoon. The north sludge lagoon was not in use. Mr. Bennington said that Keystone has not removed any sludge from the sludge lagoons since their installation.

The closed arc dust landfill was inspected. The final cover is holding up well on the top and slopes of the landfill. There was a good stand of grass on the landfill. The backwaters of the Illinois River were approximately 100 feet from the base of the landfill.

## SUMMARY

Keystone has not implemented a groundwater monitoring program for their hazardous waste surface impoundments, ditches, and sludge piles and is in non-compliance with the 35 Illinois Administrative Code, Part 725, Subpart F - Groundwater Monitoring requirements for the following violations:

- 725.190 (a) Failure to implement a groundwater monitoring program capable of determining the facility's impact on the quality of groundwater in the uppermost aquifer underlying the facility.
- 725.191 (a)(1) Failure to install at least one upgradient monitor well which will yield groundwater samples that are representative of background groundwater quality in the uppermost aquifer near the facility and not affected by the facility.
- 725.191 (a)(2) Failure to install at least three downgradient monitor wells which will immediately detect any statistically significant amounts of hazardous waste or hazardous waste constituents that migrate from the waste management area to the uppermost aquifer.

To comply with 725.191, more geologic information is needed to define the uppermost aquifer underlying the facility. The following information is needed for evaluation before a suitable groundwater monitoring system can be installed.

- 1. Description of geologic setting of facility.
- Definition of uppermost aquifer underlying the facility inincluding:
  - a. Additional soil borings.
  - b. Collection of lithologic samples.
  - c. Geologic cross-sections of facility.
  - d. Aquifer hydraulic properties.
  - e. Field and Laboratory testing
  - f. Evaluation of water balance.
- 3. Regional hydrogeologic map showing:
  - a. Unconsolidated and bedrock formations underlying the facility.
  - b. Aerial extent of geologic formations.
  - c. Major areas of recharge and discharge.
  - d. Groundwater flow direction.
- 4. Site water table (potentiometric) contour map showing:
  - a. Groundwater contours.
  - b. Groundwater flow directions.
  - c. Static water levels.
  - d. Monitor well locations.

- 725.192 (a) Failure to obtain and analyze samples from an installed groundwater monitoring system. Failure to develop and follow a groundwater sampling and analysis plan which includes:
  - 1. Detailed description of sample collection procedures.
  - Written procedures for sample preservation and shipment.
  - 3. Written description of analytical procedures used by laboratory to analyze samples.
  - Written record and plan showing chain of custody control of samples from time of collection to time of analysis.
- 725.192 (b) Failure to determine the concnetrations or values of all parameters necessary for:
  - Parameters characterizing the suitability of the groundwater as a drinking water supply.
  - 2. Parameters establishing groundwater quality.
  - Parameters used as indicators of groundwater contamination.
- 725.192 (c) Failure to establish initial background concentrations or values of all parameters, for all monitor wells, quarterly for one year. Failure to collect four replicate samples for indicator parameters for upgradient monitor wells during the first year. Failure to establish arithmetric mean and variance for each indicator parameter for each upgradient well.
- 725.192 (d) Failure to collect and analyze groundwater samples annually for parameters in 725.192 (b)(2) after the first year. Failure to collect and analyze groundwater samples semi-annually for parameters in 725.192 (b)(3) after the first year.
- 725.193 (a) Failure to prepare an outline of a groundwater quality assessment program.

- 725.193 (b) Failure to monitor for all indicator parameters, in order to allow the owner or operator to calculate the arithmetic mean and variance for each well monitored and compare these results with the initial background arithmetic mean.
- 725.193 (f) Failure to include within the annual report the evaluations of the data on groundwater surface elevations, to determine whether the requirements under 725.191 (a) for locating the monitoring wells continues to be satisfied.
- 725.194 (a)(1) Failure to keep records of the analysis required in 725.192 (c) and (d), the associated groundwater surface elevations required in 725.192 (e), and the evaluations required in 725.193 (b).
- $\frac{725.194 \text{ (a)(2)(A)}}{\text{of the parameters listed in 725.192 (b)(1)}}$  for each monitoring well quarterly.
- 725.194 (a)(2)(B) Failure to report concentrations or values of the parameters listed in 725.192 (b)(3) for each monitoring well, along with the required evaluations for those parameters under 725.193 (b) and 725.193 (c)(1) as part of the annual report required under 725.175.
- 725.194 (a)(2)(C) Failure to report the results of the evaluation of groundwater surface evaluations under 725.193 (f) and a description of the response to the evaluation as part of the annual report required under 725.175.

RAH/js

cc: DLPC/FOS, Central Region
DLPC/Compliance Monitoring
DLPC/Enforcement, V. Yang
USEPA/Region V